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"The discovery that men were already making rude flint implements in the Quaternary period has made a new scientific departure, placing primeval man in the hands of the geologists." To cross the border into the animal kingdom, and to see how one species is transformed into another, we have only to look at Huxley's series of horses: "Zoölogists, thus enabled to reconstruct ideally the ancestry of the horse, are hopeful some day to discover likewise the fossil pedigree of the rider.

"Anthropologists do not feel, therefore, that their science has been plucked up by the roots and planted somewhere else; it is growing where it is only cultivated higher than in old times."

Dr. Tylor next discusses craniology, and shows what is its true place in anthropology. The vexed question of philology, and its credibility as a witness of blood relationship is very cautiously handled. Regarding the hair, Dr. Tylor says: "The cross section of a single hair examined microscopically by Pruner's method shows it circular, oval, or reniform; its follicle-curvature may be estimated by the average diameter of the curls as proposed by Moseley; its coloring matter may be estimated by Sorby's method. The wonder is that a single bodily character should form a basis for rationally mapping out the divisions of mankind. It is now well understood that the causes of race color are not so simple as Hippocrates thought when he described the nomad Scythians as burned tawny by cold." The effect of inheritable albinism, Addison's disease, town life and other social changes, acclimating, Draper's law, and other known forces in bringing about permanent change of type is well worked out by the lecturer.

The closing part of the discourse is devoted to the development of civilization, survivals, etc. On the latter point attempt was made to offer examples of a mental state yet surviving among savages and peasants, which may have its origin in the very childhood of mankind. The notion is also advanced that the origin of races is to be sought, like the origin of domestic plants, in those regions where they are wild. Thus the negro race originated not in Africa but in Andaman and New Guinea, where the people have no fire drill, but carry about brands from place to place, and kindle new fires from their volcanoes. In like manner the origin of the civilization of the Aryan through those represented by the Egyptian and the Chinese is traced.

MICROSCOPY.¹

ROSE BENGALE IN COMBINATION WITH IODINE GREEN AND BLEU DE LYON.—Rose bengale, according to Griesbach,² is the bluest of the eosine dyes. An aqueous solution is very useful in staining chromic acid preparations of the spinal cord, as it colors the gray substance much more strongly than the white substance.

¹ Edited by Dr. C. O. WHITMAN, Newton Highlands, Mass.

² *Zool. Anzeiger*, VI, No. 135, p. 172.

Rose bengale may be used in combination with iodine green and bleu de lyon in the following manner:

A section of an alcoholic preparation is first placed in distilled water; then quickly drawn through a deep red solution of rose bengale, and again placed in aq. dest. It is next laid in iodine green for a few seconds, washed, and placed for five minutes in absolute alcohol to remove any excess of color. It may be transferred directly from the alcohol to a dilute alcoholic solution of bleu de lyon (two parts alcohol abs. and three parts aqua dest.) and left for a few seconds, then replaced in the absolute alcohol preparatory to mounting.

DOUBLE STAINING WITH ANILINE DYES.—Dr. Vincent Harris contributes to the last number of the *Quarterly Journal of Microscopical Science* (Vol. XXIII, No. 90, p. 292) a valuable article on the use of aniline dyes in double staining. His experiments were made with solutions of definite strength in regular sequence, and confined to blood-corpuscles. The method of experiment finally adopted was as follows: The blood was spread in thin layers upon cover-glasses and allowed to dry in direct sunlight. The dried blood was then wet with a few drops of some dye, and after five minutes washed with a slow stream of water from a wash-bottle; it was then dried in the flame of a spirit-lamp and allowed to cool. A second dye was then applied in the same way; and after washing the preparation was mounted in balsam, without having recourse to alcohol and clove oil.

The following combinations of dyes were found to give good results:

- Roseine and iodine green.
- Fuchsine and methylene blue.
- Fuchsine and Bismarck brown.
- Eosine and vesuvine.¹
- Iodine green and Bismarck brown.
- Hoffman's violet and Bismarck brown.
- Methyl violet and methylene blue.

Roseine followed by iodine green stained the colored corpuscles a bright red, with bluish-green nuclei; and the colorless corpuscles were so stained that three varieties could be readily distinguished.

Fuchsine and methylene formed a very successful combination. The methylene blue was used as a saturated solution in absolute alcohol.

Bismarck brown was prepared as a two per cent solution in dilute alcohol. In the use of this dye, it was found best to immerse the preparation twenty to thirty hours, as the color then remains even when passed through alcohol and clove oil.

An aqueous solution of Hoffman's violet was used with a dilute spirit solution of Bismarck brown.

The green dyes are not permanent. The solutions should be quite fresh in order to secure successful results.

¹ Regarded as identical with Bismarck brown.

Classified List of the chief Aniline Dyes, with their Solubilities in Water and Spirit.

BROWN.	RED.	ORANGE.	YELLOW.	GREEN.	BLUE.	VIOLET.
<i>Bismarck</i> — partially sol. in water; sol. in dilute spirit.	<i>Eosine</i> — Pink; freely sol. in water.	<i>Aurine</i> — Insol. in water; partly sol. in strong spirit; more so in absolute alcohol.	<i>Fluoresceine</i> — Greenish - yellow; insol. in water; sol. in spirit, the solution being beautifully fluorescent.	<i>Iodine Green</i> — Blue-green; freely sol. in water or spirit.	<i>Soluble Aniline Blue</i> — Freely sol. in water.	<i>Hoffman's Violet</i> — Freely sol. in water and in dilute spirit.
<i>Vesuvine</i> — Sol. in water.	<i>Aniline Scarlet</i> — Insol. in water; sol. in methylated spirit.	<i>Aniline Orange</i> — Ditto, ditto.	<i>Aniline Primrose</i> — Only partly sol. in meth. spirits.	<i>Malachite</i> — Green, a less blue-green; freely sol. in water and in spirit.	<i>Bleu de Lyon</i> — Insol. in water; freely sol. in strong spirit.	<i>Methyl Violet</i> — The red predominating; sol. in water partially; freely sol. in spirit.
<i>Chrysoidine</i> — Sol. in water.	<i>Flamingo</i> — Deep brownish-red; partly sol. in water; freely so in meth. spirit.	<i>Tropaeoline</i> — In deep yellow glistening scales; partly sol. in water; more so in methyl. spirit.			<i>Methylene Blue</i> — A very deep blue; freely sol. in water and in spirit.	<i>Gentian Violet</i> — The blue predominating; freely sol. in water.
	<i>Ponceau</i> — Deep red-crimson; partly sol. in water; freely so in dilute spirit.	<i>Phosphine</i> — Yellowish-orange; partly sol. in water; more so in spirit.			<i>China Blue</i> — Freely sol. in water.	<i>Tyrian Blue</i> — Near to violet; sol. in water.
	<i>Rosaniline</i> — Partly sol. in water; freely sol. in dilute spirit.	<i>Safranine</i> — Sol. in water and in spirit.			<i>Serge Blue</i> — Ditto.	<i>Spiller's Purple</i> — Sol. in spirit.
	<i>Fuchsine</i> — Partly sol. in water; sol. in dilute spirit.				<i>Blue Black</i> — Freely sol. in water.	

¹ Ponceau is a mixture of rosaniline and phosphine.

THRELFALL'S METHOD OF FIXING SECTIONS.—Mr. Threlfall has discovered a method for fixing sections on the slide which will be found superior to that of Frenzel, described in the July number of this journal.

"A thin solution of caoutchouc in benzine or chloroform is prepared and poured over the slide so as to form a film in the same way that collodium is poured on a photographic plate. When the film is dry the sections are arranged on it, and the temperature of the slide raised to the melting point of paraffine; the sections then fall on to the India rubber film which has become sufficiently sticky to adhere to them perfectly. *When the slide is cold* it is treated with naphtha or any light paraffine oil, the solvent action being more rapid the lower the boiling point of the oil used.

Absolute alcohol is readily miscible with the naphtha or light paraffine, so that the solvent is readily removed. The slide can now be placed in successive alcohols, stained and returned to absolute alcohol. It is now to be cleared with creosote or oil of cloves and mounted in the ordinary way. Apart from the great advantage of being able to stain on the slide, this India rubber method seems to possess some points of superiority over the shellac method of Giesbrecht, *Zool. Anzeiger*, 1881. This depends on the fact that *sections can be mounted in balsam direct from the naphtha*.—*Zool. Anzeiger*, No. 140, p. 300, 1883.

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SCIENTIFIC NEWS.

— Baron Nordenskjöld's expedition to Greenland started last week in the *Sofia*, under the command of Captain Nilsson, and a crew of thirteen hands. Baron Nordenskjöld is accompanied by Dr. Nathorst, geologist; Dr. Berlin, surgeon and botanist; Dr. Forsstrand, zoölogist; Dr. Hamberg, hydrographer; two Laplanders, two Norwegian ice-masters, one harpooner, and Herr Kolthoff as assistant zoölogist, with Herr Kjellström as typographer and photographer. The *Sofia* carries provisions sufficient for a sojourn of fourteen months on the inland ice, assuming that the interior of Greenland is covered by ice. The *Sofia* had as passengers to Iceland Count Stromfeldt, Dr. Arpi, and Herr Flink, who intend staying in the island for some time for the purposes of study and collecting.

— M. Fredericq, of Liege, says the *English Mechanic*, lately put several aquatic coleoptera (including the great water beetle) in aqueous solutions of curare and strychnine in poisonous quantity. A few drops of these liquors sufficed to poison a frog in a few minutes. The insects, however, lived in them, some more than a fortnight, others nearly a month (when the experiment was concluded). These Coleoptera are certainly sensible to the action of curare and strychnine, and the absence of symptoms of poison-